Department of Health and Human Services
Maine People Living Safe, Healthy and Productive Lives
Paul R. LePage, Governor
Mary C. Mayhew, Commissioner

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March 23, 2016

Senator Eric Brakey, Chair
Representative Andrew Gattine, Chair
Joint Standing Committee on Health and Human Services
100 State House Station
Augusta, Maine 04333-0100

Dear Senator Brakey, Representative Gattine and Members of the Joint Standing Committee on Health and Human Services:

Enclosed is the 2015 Annual Report to the Legislature for the Maternal, Fetal and Infant Mortality Review Panel submitted by the Department of Health and Human Services. This report is required under Title 22 of the M.R.S.A., Chapter 261.

The report discusses the Maternal, Fetal and Infant Mortality Review Panel activities and recommendations in State Fiscal Year 2015 as well as planned activities for State Fiscal year 2016.

Sincerely,

Mary C. Mayhew
Commissioner

MCM/klv

Enclosure

Maine CDC Maternal, Fetal and Infant Mortality Review Panel (MFIMR)

July1, 2014 - June 30, 2015

Submitted to the Joint Standing Committee on Health and Human Services

2015 Annual Report

Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

Paul R. LePage, Governor
Mary C. Mayhew, Commissioner

Maine Maternal, Fetal and Infant Mortality Review Panel (MFIMR)
2015 Annual Report to the Legislature

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EXECUTIVE SUMMARY

Background

In 2005, the 122nd Legislature passed *An Act to Establish a Maternal and Infant Death Review Panel* to examine issues related to maternal and infant deaths in Maine. In 2010, the 124th Legislature amended this statute to authorize the Maternal and Infant Death Review Panel to review fetal deaths occurring after 28 weeks gestation, i.e., stillborn infants. With this change, the Panel is now referred to as the Maternal, Fetal and Infant Mortality Review Panel.

Purpose

The overall purpose of the Maine Maternal, Fetal and Infant Mortality Review Panel (MFIMR), using a public health approach, is to strengthen community resources and enhance State and local systems and policies affecting women, infants and families in order to improve health outcomes in this population and prevent maternal, fetal and infant mortality and morbidity. The infant mortality rate is a sensitive public health indicator of social health and well-being. By understanding the factors associated with maternal, fetal and infant deaths, we will improve our ability as a State to most effectively direct prevention efforts and to take actions to promote healthy mothers and infants.

Highlights

This 2015 report summarizes relevant data contributing to perinatal outcomes, challenges, activities and plans for the MFIMR Panel.

The MFIMR Panel identified the following issues as needing in-depth investigation over the next five years (2013-2018):

- Factors that contribute to preterm birth, pregnancy loss, and strategies for prevention.
- Barriers to delivery of the highest risk infants (e.g. very low birth weight/premature) at Level III facilities.
- Sudden infant death and sudden unexpected infant death as emerging issues, including sleep-related deaths.

Recommendations

- Increase awareness of MFIMR Panel and related activities and resources for healthcare providers and bereaved families.
- Distribute Rules related to Screening Newborns for Critical Congenital Heart Disease to hospitals and health care providers. Rules outline screening methodology, follow up and data collection to promote consistency and quality in screening systems.
- Determine which recommendations to implement from the technical assistance provided by the National Fetal Infant Mortality Review Technical Assistance in order to improve the MFIMR system.

For more information on activities of the MFIMR Panel:
Contact Ellie Mulcahy, Panel Coordinator, Maine CDC, eleanor.a.mulcahy@maine.gov, or
207-287-4623 http://www.maine.gov/dhhs/mecdc/population-health/mch/perinatal/maternal-infant/

PANEL 2015 REPORT

Background

In 2005, the 122nd Legislature passed *An Act to Establish a Maternal and Infant Death Review Panel* to examine issues related to maternal and infant deaths in Maine. In 2010, the 124th Legislature amended this statute to authorize the Maternal and Infant Death Review Panel to review fetal deaths occurring after 28 weeks gestation, i.e., stillborn infants. With this change, the Panel is now referred to as the Maternal, Fetal and Infant Mortality Review Panel. The Legislature also repealed the sunset on the Panel allowing the Panel to continue its work beyond the original end date of January 1, 2011.

Purpose

The overall purpose of the Maine Maternal, Fetal and Infant Mortality Review Panel (MFIMR), using a public health approach, is to strengthen community resources and enhance State and local systems and policies affecting women, infants and families in order to improve health outcomes in this population and prevent maternal, fetal and infant mortality and morbidity. The infant mortality rate is a sensitive public health indicator of social health and well-being. By understanding the factors associated with maternal, fetal and infant deaths, we will improve our ability as a State to most effectively direct prevention efforts and to take actions to promote healthy mothers and infants.

The Panel

The Maine CDC MFIMR Panel is a multidisciplinary group of health care and social service providers, public health officials, law enforcement officers, parents and other persons with professional expertise on maternal and infant health and mortality. The Panel is supported by a dedicated revenue account for a portion of the Panel coordinator's time. All Panel members are volunteers.

The Panel takes a broad, holistic approach to improving the quality of life for all of Maine's women, infants and families. The Panel gathers and reviews information relevant to infant and maternal mortality, including factors contributing to mortality, considers the strengths and weaknesses of the current maternal and infant health care delivery system and makes recommendations to prevent future deaths and improve the overall health and safety of Maine's infants and mothers.

The Panel identified the following issues as needing in-depth investigation over a five-year period (2013 to 2018):

- Factors that contribute to preterm birth, pregnancy loss and strategies for prevention.
- Barriers to delivery of the highest risk infants (e.g. very low birth weight/premature) at hospitals with appropriate facilities and professionals to provide the best chance of survival for the infant (i.e. Level III facilities).
- Sudden infant death and sudden unexpected infant death as emerging issues, including sleep related deaths.

Maine MFIMR Activities in State Fiscal Year 2015

The Maine CDC MFIMR Panel met three times in SFY 2014; it did not meet in 2015. Because of the challenges to ascertain cases the MFIMR Panel requested technical assistance from the National Fetal and Infant Mortality Review (NFIMR) on proven case ascertainment practices.

Summary of Strategies and Activities:
MFIMR-reviewed cases have generated the following activities to reduce infant deaths:

- Community Strategy: In 2013, the Maine CDC worked with the March of Dimes and the Perinatal Leadership Council to implement a quality improvement initiative to reduce the number of early deliveries at less than 39 weeks gestation of the pregnancy. Twenty one of the twenty seven birth hospitals in Maine voluntarily reported data on the rate of elective deliveries before 39 weeks of pregnancy during calendar year 2014 to Leapfrog Group*. Four of these hospitals met the goal of having less than 5 percent of births between 37-39 completed weeks being delivered by cesarean section or induction without a medical indication. Three of these hospitals have shown progress over the past year. *(Leapfrog Group is a non-profit organization that compares hospitals on national standards of safety and quality.)

- Community Strategy: A series of training sessions was developed by the Maine CDC through a contract with Maine Medical Center to use with community partners including: Maine Families Home Visiting, child abuse/neglect prevention councils, Community/Public Health Nursing, Office of Child & Family Services staff, case managers and Medication Assisted Treatment Center staff. Training was provided in four locations; Portland, Augusta, Rockland and Lewiston with 190 participants. Others in Maine received training via grand rounds presentations at hospitals, and at the Perinatal Nurse Leadership Collaborative. These sessions included infant mandated reporting, abusive head trauma (shaken baby) prevention and safe sleep.

- Community Strategy: Birth hospital staff were surveyed to identify methods of educating families regarding safe sleep environments. Respondents stated that approaches included discussion: at prenatal classes, during tours of the birthing unit and during birth hospitalization. Perinatal hospital representatives from across Maine held discussions about safe sleep and educating families. A Maine Chapter of Cribs for Kids was developed with Dr. Jennifer Hayman from Maine Medical Center through the Maine Children's Trust and is available statewide, primarily through local child abuse /prevention councils and the network of Maine Families Home Visiting programs. A family or a healthcare provider that identifies a family with a need for a crib to significantly reduce the risk of an unsafe sleep situation can make a referral to the Maine Families Home Visiting Program. Maine Families staff will conduct a home visit to determine eligibility and to establish a relationship with the family for support and education. Approximately 500 cribs have been distributed to families in need since July 2010. In follow up with families receiving cribs, most people answer "always" or "almost always" to questions about sleep setting: baby sleeps alone, baby sleeps on back, baby sleeps on firm mattress, the crib is free of toys, bumpers and blankets , and the Pack and Play is used for all sleeps and naps. Funding for Cribs for Kids in Maine has been provided through small grants by the Kohl's Cares for Kids Foundation and Maine Families/Maine Children's Trust for future distribution.

- Community Strategy: The Maine CDC convened a multi-disciplinary workgroup, the Continuum of Care Collaborative, to focus on high-quality obstetric and newborn care for families planning a

home birth. The Continuum of Care Collaborative developed a communication tool for the transfer of care that has a potential impact for any transfer of care (home to hospital, community hospital to tertiary care center). http://www.maine.gov/dhhs/mecdc/population-health/mch/perinatal/resources.html

- Policy Strategy: Screening for Critical Congenital Heart Defects (CCHD) for all newborns offers early identification of at-risk infants with the opportunity for further evaluation and potential to reduce infant deaths from some congenital heart diseases. Legislation was enacted by Public Law 397, An Act to Protect Newborns from Critical Congenital Heart Disease. Education has been provided to birthing hospitals in Maine to promote consistent and quality screening. All Maine birth hospitals were screening babies for CCHD as of September 2013.

- System Strategy: A review was conducted of infant deaths that occurred in unsafe sleep environments for 2009-2012 of cases from the Chief Medical Examiner's Office. Maine continues to have ten to fifteen deaths fitting this definition per year. The data collected was analyzed and compared to a previous study for the time period 2002-2006. There continue to be multiple unsafe aspects of the sleep setting in each death (multiple items in crib plus known substance use or bed-sharing). One new risk was identified in two cases with wearable blankets that were used to swaddle the infants over two months of age. Further data collection will occur in State Fiscal Year 2016.

- System Strategy: Another activity to reduce infant mortality in Maine includes participation in the U.S. DHHS, Health Resource Services Administration (HRSA) Collaborative Improvement and Innovation Network (CoIIN) which brought teams from states together to facilitate collaborative learning and adoption of proven quality improvement principles and practices to reduce infant mortality and improve birth outcomes. Maine, as part of the rollout of the national initiative, reviewed infant mortality data and prioritized strategies to reduce the infant mortality rate (IMR) utilizing 24 months of Plan Do Study Act (PDSA) cycles of change. The two projects selected for Maine are safe sleep and reducing smoking by pregnant women.

The HRSA Maternal Child Health Block Grant requires states to conduct a comprehensive strength and needs assessment every five years. The qualitative data collection process began during SFY15 and assessed the health of Maine women, pregnant women, infants and children, teens and young adults and children with special health needs. This assessment and the Collaborative Improvement and Innovation Network work align with the work of MFIMR and will facilitate activities of the MFIMR Panel, including reducing low risk cesarean births, increasing breastfeeding and the percentage of babies who sleep in a safe sleep environment.

Challenges Experienced by the MFIMR Panel

No MFIMR Panel meetings were held during State Fiscal Year 2015 due to the very limited number of cases available for Panel review. Multiple issues contributed to the limited number of cases: identification of cases, reaching families to obtain consent, and staff time for record review.

Statutory requirements providing a four-month waiting period before contacting the family and requiring family consent to review records present challenges to inviting families to participate in the review process. Experience has shown that:

- some families have moved since the death,
- many have unlisted phone numbers or only use cell phones, and

- research to ensure a valid mailing address is a time consuming process, using web and programmatic resources to avoid sending materials to the wrong family.

All cases reviewed by the Panel since the start of the Panel were referred to the Panel coordinator by a healthcare provider or the family contacted the Panel coordinator after viewing the website. None of the referrals were attributed as the result of a letter from the Maine CDC to the family.

Currently there are too few cases reviewed by the Panel to identify recommendations that can be generalized. The small number of cases creates a biased sample representing those families that have already accessed services and do not represent underserved and minority populations. In order to have recommendations that can be generalized, the NFIMR recommends that states with less than 100 deaths per year should review all deaths. A recommendation is for the Panel to begin with reviewing the approximately 30 fetal deaths that are over 27 weeks gestation, plus half of the infant deaths and all of the maternal deaths in a given year. That would result in the Panel reviewing a minimum of 75 cases per year.

Preliminary infant mortality statistics for 2013 show an increase in infant deaths in Maine with 7.1 deaths per 1,000 live births. This demonstrates a 31% increase from 5.40 in 2010. With the statutory restrictions requiring consent to review medical records and difficulty contacting families, it is extremely challenging to assess preventable deaths and to identify specific public health approaches to prevent future deaths.

Assessment and Technical Assistance from NFIMR

The Maine CDC MFIMR Panel engaged the NFIMR Program, at the American College of Obstetrics and Gynecology (ACOG), with the goal of identifying improvements that can be made to Maine's MFIMR system to increase the number of cases available to be reviewed by the Panel.

Recommendations from the National Fetal Infant Mortality Review:

- Implement multiple overlapping processes for case identification.
- Expand partnerships with organizations and individuals (birth hospitals, advocacy groups, providers and bereavement counselors) to increase awareness by bereaved families of the work of the Panel.
- Identify a spokesperson for MFIMR with possible public service announcements on topics related to the prevention of fetal and infant mortality.
- Improve the system of accessing death certificates.
- Identify dedicated staff to coordinate panel and related activities.

Recommendations were reviewed by the Maine CDC and Division of Population Health leadership and discussed with the Panel. The Panel supports actions to implement these recommendations to more completely understand the factors surrounding maternal, fetal and infant deaths in Maine.

Plans for Maine CDC MFIMR Panel in 2016

Past Panel discussions identified several activities to be addressed in the coming year:

- Continue to monitor statistical data for trends in maternal, fetal and infant mortality. Specifically the Panel will look at the timing and adequacy of prenatal care, access to care for pregnant teens, impact of substance abuse and the appropriateness of care for infants with very low birth weight, including distance from a Level III facility.

- Complete a comprehensive analysis of data related to preterm births, including relevant risk factors such as smoking, substance abuse and chronic disease, such as diabetes.
    - Form a collaborative workgroup with representatives from Maine CDC, MFIMR, the DHHS Sentinel Events Program, and the Child Death and Serious Injury Panel to review the analysis and identify opportunities for reducing preterm births.

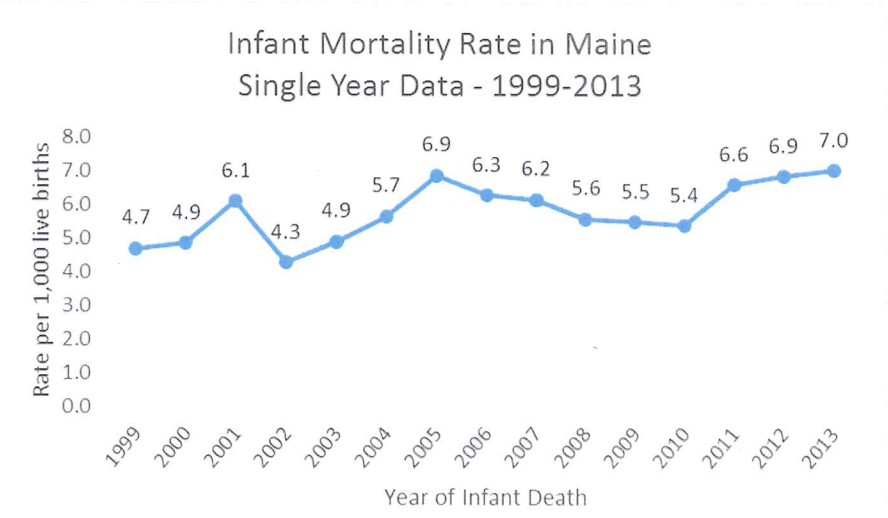
- Include Panel coordinator participation in CoIIN activities to address factors contributing to infant mortality, specifically prenatal smoking and unsafe sleep environments.

- Emphasize Panel coordinator work with the Division of Population Health leadership to follow up on recommendations and develop plans to implement system improvements.

- Explore options to allow more flexibility in the review of records related to maternal, fetal and infant deaths.

Appendix A: Data Highlights

Summaries of indicators related to several birth trends and infant mortality are provided below.[1] The Maine Center for Disease Control and Prevention (Maine CDC) Maternal Fetal and Infant Mortality Review Panel (MFIMR) monitors statistical data for trends in maternal, fetal and infant mortality. Sources of Maine information include data compiled for the annual Maternal and Child Health (MCH) Title V Block Grant report and the MCH Strengths and Needs Assessment, which is updated every five years.[i] MFIMR will have more timely access to Maine's infant birth/death datasets in the near future. Maine has developed a list of indicators from the birth and linked infant birth/death datasets that will be calculated on a "real-time" basis when provisional vital statistics data become available. These indicators are part of the national Collaborative Improvement & Innovation Network (CoIIN) Infant Mortality Initiative.



Maine's infant mortality has increased in recent years. While the Maine CDC generally produces five-year rates to stabilize yearly fluctuations, a display of single year rates is useful in assessing overall trends. A workgroup at the Maine CDC is currently conducting an in-depth review of Maine's infant mortality rates, trends and causes.

[1] Maine birth data (preliminary) from 2013 and fetal death data and infant mortality data from 2013 were the most recent data available at the time of these analyses. Five-year averages were used for some analyses with small numbers of events. Note that numbers and statistics may differ from other reports due to factors such as data file version and the analytic methods used such as handling of missing data and case definitions.

Indicators of Fetal, Infant and Maternal Mortality

Indicator	Maine Current Period[ii]	U.S. Data	Maine Prior Period	Maine Prior Period
Fetal Mortality Measures Time Period	2009-2013	2013[iii]	2008-2012	2007-2011
Fetal mortality rate (per 1,000 live births and fetal deaths) 20+ weeks gestation	4.4	6.0	4.2	4.4
Number of fetal deaths per year (20+ weeks gestation)				
Range	48-62	--	48-62	48-65
Average	57	23,595	56	60
Gestational age at death				
Between 20 and 27 weeks	45.9%	51.2%	46.8%	48.0%
At 28 weeks or more	54.1%	48.8%	53.2%	52.0%
Infant Mortality Measures Time Period	2009-2013[iv]	2009-2013[v]	2008-2012[vi]	2007-2011
Infant mortality rate (number of deaths under 1 year of age per 1,000 live births)	6.3	6.1	6.0	5.8
Neonatal mortality rate (number of deaths to infants less than 28 days per 1,000 live births)	4.2	4.1	4.0	4.1
Number of infant deaths per year				
Five-year range	70-90	--	70-87	70-87
Five-year average	81	24,416	78	78
Distribution of timing of death (percent)				
Early neonatal (Less than 24 hours)	40.3%	41.0%	42.3%	44.7%
Early neonatal (1-6 days)	13.8%	12.6%	12.2%	13.1%
Late neonatal (7-27 days)	11.6%	13.0%	12.4%	11.9%
Post neonatal (28 days or older)	34.5%	333.4%	32.9%	30.1%
Gestational age at birth among infant deaths (percent)				
Early preterm infant (< 34 weeks gestation)	50.4%	56.7%	56.1%	61.0%
Preterm (34-36 weeks gestation)	11.0%	9.7%	9.4%	8.6%
Not preterm (37 weeks or more)	38.6%	32.7%	34.5%	30.4%
Unknown	-	<1%	-	-
Maternal Mortality Measures Time Period	2004-2013[vii]	2007[viii]	2003-2012[ix]	2002-2011
Number of maternal deaths due to pregnancy-related causes	4	548	4	3
Number of maternal deaths, women who died within one year of pregnancy, due to any cause	38	--	38	39
Infant Birth Measures Time Period	2013[x]	2013[xi]	2012[xii]	2011[xiii]
Number of live births to Maine residents	12,777	3,932,181	12,692	12,700

Indicator	Maine Current Period[ii]	U.S. Data	Maine Prior Period	Maine Prior Period
Percent of very low birthweight infants delivered at facilities for high-risk deliveries and neonates (Level III facility)	81.3%	*States range* 45.6% - 99.1%[xiv]	80.5%	82.6%
Percent low birthweight births, <2500 grams	7.1	8.0%	6.7%	6.7%
Low birthweight birth status Very low birth weight (<1500 grams) Moderate low birth weight (1500-2499 grams) Normal birth weight (2500+ grams) Unknown	<1% 6.6% 92.8% <1%	<1% 7.3% 91.9% <1%	1.1% 5.6% 93.2% <1%	1.1% 5.6% 93.2% <1%
Percent of women with first trimester prenatal care	88.7%*	--	88.1%	89.4%
Percent preterm birth (less 37 weeks gestation based on clinical estimate of gestation)	8.1%	9.4%[xv]	7.8%	8.3%
Infant Health Time Period	**2012**	**2011**	**2011**	**2010**
Sleep position (percent and 95% confidence interval) Percent of new moms who most often placed their infants on their backs to sleep	83.0%[xvi] (79.3-86.1%)	*26 state/area range* 53.1.-84.5%[xvii]	81.2%[xviii] (78.1-83.9%)	80.9%[xix] (77.9-83.6%)
Drug-affected newborns - Number of "drug withdrawal syndrome in newborn" coded on Maine birth hospitalization discharge records	3.1%[xx] 385	--	2.2% 279	2.2% 280

*Based on records collected in the first 8 months of 2013 using the non-revised certificate. Maine implemented the 2003 U.S. Standard Certificate of Live Birth in mid-2013. Although prenatal care measures are collected on both versions of the birth certificate, they have been substantively modified. Therefore, data for these items are not considered comparable between revisions and are not combined in tabulations or national data files.[xxi]

Appendix B: Indicators/measures monitored by MFIMR

Critical to the work of the MFIMR Panel is maintaining an awareness of data and trends related to fetal, infant and pregnancy-related maternal deaths and birth outcomes in Maine, as well as nationally. The insights gained through case reviews coupled with population level data guide the efforts of the MFIMR Panel to improve the overall health and safety of Maine's infants and mothers.

Fetal Mortality

Although the majority of fetal deaths occur before 20 weeks gestation for unknown reasons, it is important to look at the timing and causes we have the ability to impact for better pregnancy outcomes. In Maine, fetal mortality rates are based on deaths that occur in utero beyond 19 weeks gestation. An average of 57 fetal deaths occur each year in Maine; nearly half (46 percent) of Maine's recorded fetal deaths occur between 20 and 27 weeks gestation. Four leading causes of death account for 46 percent of recorded fetal deaths in Maine.

By rank, the leading causes of fetal deaths in Maine between 2008 and 2012 were:

1. Complications of the placenta, umbilical cord and membranes
2. Congenital malformations, deformations, chromosomal abnormalities
3. Maternal complications of pregnancy
4. Disorders related to short gestation and low birth weight

Infant Mortality

The infant mortality rate includes all deaths of infants from birth to 365 days of life. An average of 81 Maine babies die before their first birthday. Five leading causes of death account for 62 percent of infant deaths in Maine.

By rank, the leading causes of infant deaths in Maine[xxii] between 2009 and 2013 were:

1. Congenital malformations, deformations and chromosomal abnormalities
2. Disorders related to short gestation and low birth weight, not elsewhere classified (low birth weight)
3. Sudden infant death syndrome (SIDS)
4. Newborn affected by maternal complication of pregnancy (maternal complications)
5. Unintentional injuries

Maternal Mortality

Across the country for every 100,000 births there are about 13 maternal deaths per year related to or aggravated by pregnancy or pregnancy management[xxiii]. Maternal deaths attributed to direct obstetric causes include eclampsia and pre-eclampsia, hemorrhage and placenta previa, obstetrical tetanus, obstetric embolism and other direct causes. Possible explanations for an observed national increase include a rise in the number of caesarean sections, particularly among women who have undergone several previous C-sections and the rise in obesity.

Maternal mortality can also be measured using a more inclusive definition, that is, deaths to women within one year of pregnancy from any cause. Between 2004 and 2013 there were 38 deaths to Maine women who died in Maine within one year of pregnancy; 47.4 percent of these deaths were attributed to

illness or disease, 34.2 percent to unintentional injuries such as motor vehicle crashes or unintentional poisonings, 15.8 percent to assault or suicide and 2.6 percent of undetermined intent. Of the deaths directly related to pregnancy or childbirth in the last decade in Maine, one death was due to an obstetric embolism, two deaths resulted from peripartum cardiomyopathy and one death from postpartum coagulation defect.

Infant Birth and Health

Maine's MFIMR Panel examines local, State and national data on risk factors for poor birth and infant health outcomes to inform case selection and review. Many infant birth and health indicators are associated with infant health, illness, disability and death and they are among the objectives of Healthy People 2020[xxiv], Healthy Maine 2020 and the Maternal and Child Health Bureau's Title V Program.[xxv] Emerging issues and those with the potential to improve infant outcomes through public health and policy approaches are monitored on a regular basis. Three of these issues are summarized below.

Delivery Facility for High Risk Births: Research has shown that very low birth weight and very pre-term infants not born in level III hospitals are at increased risk of neonatal or pre-discharge death.[xxvi] Increasing the number of very low birth weight babies born at Level III hospitals may improve health outcomes for these infants. In Maine, 81.3 percent of very low birth weight infants were delivered at a Level III facility in 2013. MFIMR Panel members have reviewed high-risk infant delivery patterns to determine the feasibility of system-related improvements in access to appropriate birth facilities.

Sleep position: The American Academy of Pediatrics (AAP) has recommended that infants be placed on their backs to sleep, because infants who sleep prone have an increased risk of dying from sudden infant death syndrome (SIDS). [xxvii] More than eight of ten Maine mothers most often placed their infants on their backs to sleep (83.0 percent) in 2012. [xxviii] In Maine, no statistically significant differences are observed with use of the recommended sleeping position among mothers based on educational attainment, age, income or insurance status. [xxix]

Drug affected babies: Another emerging issue that may impact infant and maternal health is the number of infants born who have been exposed to drugs in utero. This population is of concern because they are at increased risk for preterm birth, sudden unexpected infant death (SUID) and other causes of death. Based on Maine hospital discharge data, "drug withdrawal syndrome in newborn" (based on ICD-9-CM 779.5) was noted on 385 (3.1 percent) of the Maine birth hospitalization discharges in 2012.[xxx] This represents a 30-fold increase since 2000, when 13 birth hospitalization discharges were noted to involve drug withdrawal syndrome. It is difficult to determine whether this noted increase represents true change in the incidence of drug withdrawal syndrome in newborns or is due, at least in part, to required reporting resulting in better recognition and diagnostic coding of the syndrome in more recent years.

Appendix C: Panel Membership

Maternal, Fetal and Infant Mortality Review Panel Members SFY 2015

Cheri Sarton, Instructor, University of Maine

Christopher Pezzullo, Chief Medical Officer, DHHS

Denise Yob, Epidemiologist, USM/Maine CDC

Doug Dransfield, Retired Neonatologist

Ellen Bridge, Methodist Minister

Ellie Mulcahy, Director, Genetics Program/MFIMR Panel Coordinator, Maine CDC

Jay Naliboff, Maine Chapter, American College of Obstetrics and Gynecology, Panel Co-Chair

Jennifer Hayman, Hospitalist, Maine Medical Center

Kathy O'Connor, Perinatal Nurse, Southern Maine Medical Center

Kelley Bowden, Perinatal Outreach Education, Maine Medical Center, Panel Co-Chair

Mary Connolly, Neonatology Section – Kelley 6, Eastern Maine Medical Center

Peg Bradstreet, Clinical Nurse Specialist

Rick Hobbs, Maine Chapter, Academy of Family Physicians

Shannon Bonsey, Chief Operating Officer, Penquis CAP

Shannon King, Women's Health, Maine DHHS CDC

Ad Hoc members

Anna Love, State Police – Public Safety

Michael Pinette, OB/GYN Associates

Appendix D: End Notes

[i] Maine Department of Health and Human Services, Division of Family Health, Maternal and Child Health Services Title V Block Grant, State Narrative for Maine: Application for 2015. Available from Health Resources and Services Administration. https://perfdata.hrsa.gov/MCHB/TVISReports/default.aspx.

[ii] Maine Center for Disease Control & Prevention, *Maine Vital Records Data (Fetal Death Certificates)*. 2007-2013. and Centers for Disease Control and Prevention. National Center for Health Statistics. VitalStats. http://www.cdc.gov/nchs/vitalstats.htm on 12/2/ 2015.

[iii] User Guide to the 2012 Fetal Death Public Use File, Reproductive Statistics Branch, Division of Vital Statistics, NCHS. Hyattsville, MD: Accessed 10/18/14 from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/fetaldeath/2012FetalUserGuide.pdf. and Centers for Disease Control and Prevention, National Center for Health Statistics, VitalStats, http://www.cdc.gov/nchs/vitalstats.htm on 12/2/2015.

MacDorman MF, Kirmeyer SE, Wilson EC. Fetal and perinatal mortality, United States, 2006. National vital statistics reports; vol 60 no 8. Hyattsville, MD: National Center for Health Statistics. 2012. Accessed 11/22/12 from http://www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_08.pdf.

[iv] United States Department of Health and Human Services (US DHHS), Centers of Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS). Linked Birth / Infant Death Records 2007-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER On-line Database. Query for Maine based on years 2009-2013. Accessed at http://wonder.cdc.gov/lbd-current.html on 12/2/2015.

[v] United States Department of Health and Human Services (US DHHS), Centers of Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS). Linked Birth / Infant Death Records 2007-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER On-line Database. Query based on years 2009-2013. Accessed at http://wonder.cdc.gov/lbd-current.html on 12/2/2015.

[vi] United States Department of Health and Human Services (US DHHS), Centers of Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS). Linked Birth / Infant Death Records 2007-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER On-line Database. Query for Maine based on years 2008-2012. Accessed at http://wonder.cdc.gov/lbd-current.html on 12/2/2015.

[vii] Maine Center for Disease Control & Prevention, *Maine Vital Records Data (Death Certificates)*. 2000- 2013.

[viii] Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Accessed 12/05/12 from http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_10.pdf.

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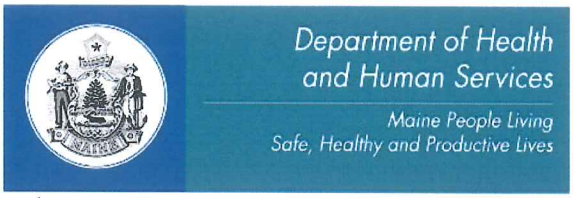

Paul R. LePage, Governor Mary C. Mayhew, Commissioner

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